

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

› [SCULPFUN](#) /

› [SCULPFUN IR-2 Infrared Laser Module User Manual](#)

SCULPFUN IR-2

SCULPFUN IR-2 Infrared Laser Module User Manual

Model: IR-2

1. INTRODUCTION

The SCULPFUN IR-2 Infrared Laser Module is a high-precision engraving tool designed for use with various laser engraver machines, including SCULPFUN S9 and S30 series. Featuring a 2000mW output power and a 1064nm wavelength, this module is particularly effective for engraving on plastics and a wide range of metals with exceptional detail.

2. SAFETY INFORMATION

WARNING: This is a Class IV laser product. Direct exposure to the laser beam can cause severe eye and skin damage. Always wear appropriate laser safety goggles (specifically rated for 1064nm infrared lasers) when operating this device. Never look directly into the laser beam or its reflection. Ensure the work area is well-ventilated to avoid inhaling fumes from engraved materials.

For detailed safety guidelines, refer to the safety video provided by the manufacturer.

Your browser does not support the video tag.

Video: SCULPFUN IR-2 Usage Precautions. This video demonstrates important safety measures and precautions when operating the IR-2 Infrared Laser Module.

3. PRODUCT FEATURES

- **High Precision Engraving:** The IR-2 module offers ultra-fine engraving capabilities with a 0.03mm laser spot and pulse energy up to 20,000Hz, allowing for clear and distinct marks on various materials.
- **1064nm Infrared Laser:** With a longer wavelength compared to blue lasers, the 1064nm infrared laser is highly effective for engraving plastics and a wide range of metals.
- **Versatile Material Compatibility:** Ideal for engraving on metals such as gold, silver, platinum, copper, aluminum, zinc, iron, stainless steel, metal oxides, alloys, plastics, and dark acrylics.
- **Broad Engraver Compatibility:** Compatible with all SCULPFUN laser engraving machines (e.g., S9, S30 series) and other laser engraving machine accessories like rotary rollers for cylindrical objects.
- **Integrated Focusing Post:** Includes a focusing post for quick and easy focus adjustment, eliminating the need for

additional accessories.



Image: SCULPFUN IR-2 Infrared Laser Module highlighting its 1064nm wavelength, 0.03mm light spot, and 20KHz pulse energy, suitable for engraving plastic and metal.

450nm
Blue laser

✗ Plastic



✗ Zinc Alloy Electroplating Nickel

OTHER

- ✗ Iron
- ✗ Copper
- ✗ Aluminium

...

1064nm
Infrared laser

✓ Plastic



✓ Zinc Alloy Electroplating Nickel

OTHER

- ✓ Iron
- ✓ Copper
- ✓ Aluminium

...

Image: Comparison demonstrating the superior engraving capability of the 1064nm infrared laser on plastic and various metals compared to a 450nm blue laser.



Image: Detailed engraving of a pug on a metal tag, showcasing the 0.03mm ultra-fine spot for high-precision patterns.

4. PACKAGE CONTENTS

The SCULPFUN IR-2 Infrared Laser Module package includes the following items:

- 1 × 2W Infrared Laser Module
- 1 × Adapter
- 1 × S10 Mounting Plate
- 1 × SF-A9 Mounting Plate
- 1 × Universal Mounting Plate for Other Models
- 1 × Accessories Package (including focusing post)



Image: All components included in the SCULPFUN IR-2 Infrared Laser Module package.

5. SETUP INSTRUCTIONS

Follow these steps to install and set up your SCULPFUN IR-2 Infrared Laser Module.

5.1. Module Assembly

1. Attach the appropriate mounting plate (S10, SF-A9, or universal) to the IR-2 laser module using the provided screws. Ensure a secure fit.
2. Mount the assembled laser module onto your SCULPFUN laser engraver machine. Secure it with the thumbscrews.
3. Connect the power and data cables from the laser module to your engraver.

5.2. Power Adapter Compatibility

The IR-2 laser module requires a 24V adapter. If your existing laser engraver uses a 12V adapter for its original laser head, you must replace it with the provided 24V adapter when using the IR-2 module. Failure to do so may damage the laser module or the engraver.

Important: If your machine has an air pump, unplug its terminal wire when using a 24V adapter to avoid burning the air pump. When replacing a 12V machine's original laser head with the IR-2, replace the original 12V adapter with the 24V adapter at the same time to prevent damage to the laser head.

Your browser does not support the video tag.

Video: SCULPFUN IR-2 Infrared Laser Module 2W. This video provides a visual guide for the installation process, including attaching mounting plates and connecting the module to the engraver.

6. OPERATING INSTRUCTIONS

The SCULPFUN IR-2 module is designed for use with compatible laser engraving software such as LightBurn. Ensure your software is correctly configured for the IR-2 module.

6.1. Focusing the Laser

Use the integrated focusing post to quickly set the correct focal distance. Lower the laser module until the focusing post touches the material surface, then secure the module.

6.2. Software Settings (LightBurn Example)

When using LightBurn, adjust the following parameters for optimal engraving results:

- **Speed:** Adjust based on material. For plastic, a speed of 6000mm/min is a reference. For stainless steel, 1000-3000mm/min is a reference.
- **Power:** Set to 100% for most engraving tasks.
- **Interval:** For fine detail, an interval of 0.01mm to 0.03mm is recommended.
- **Image Mode:** Dither is often suitable for detailed images.

Note: Always keep the work area well-ventilated during operation.

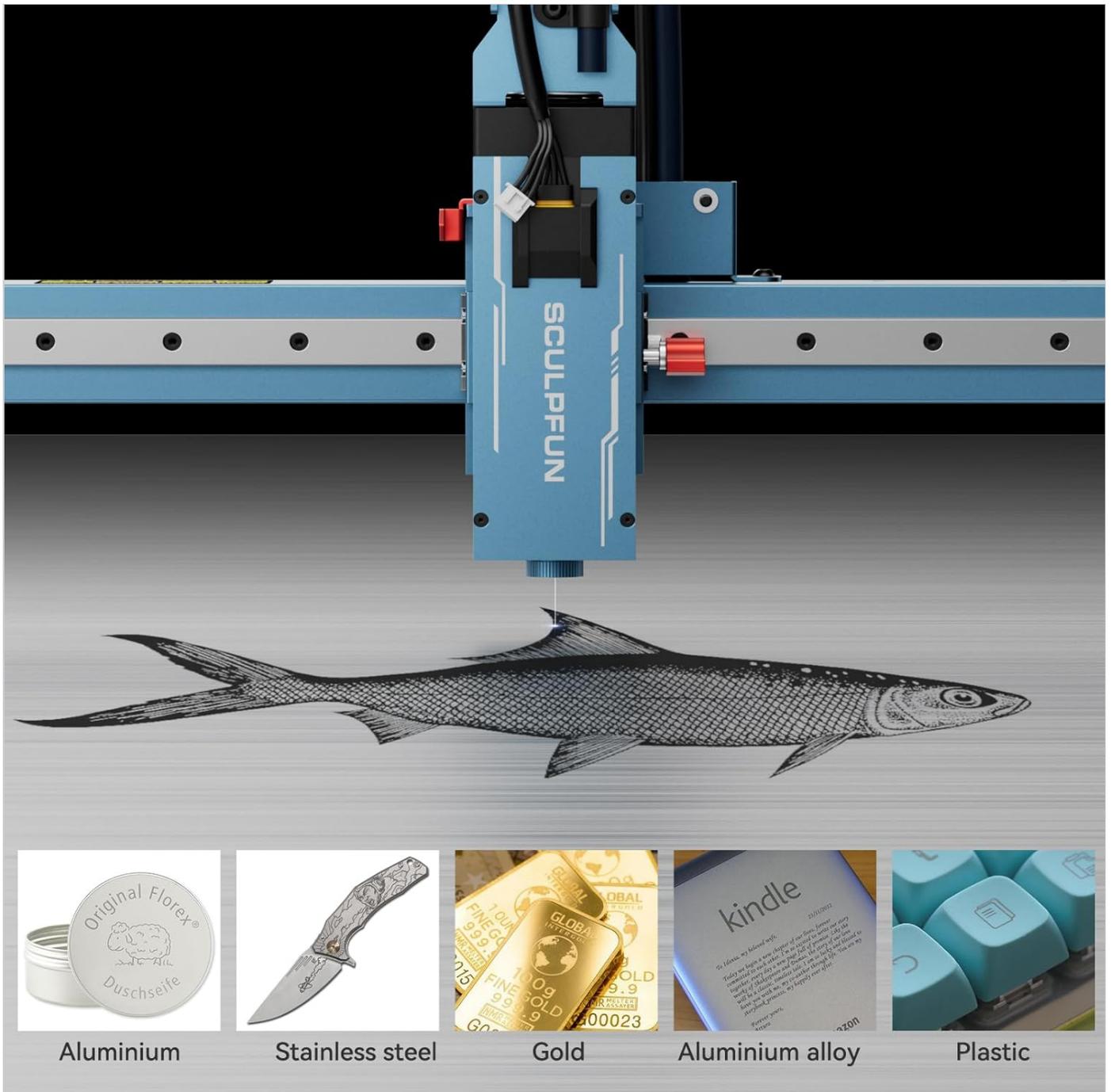
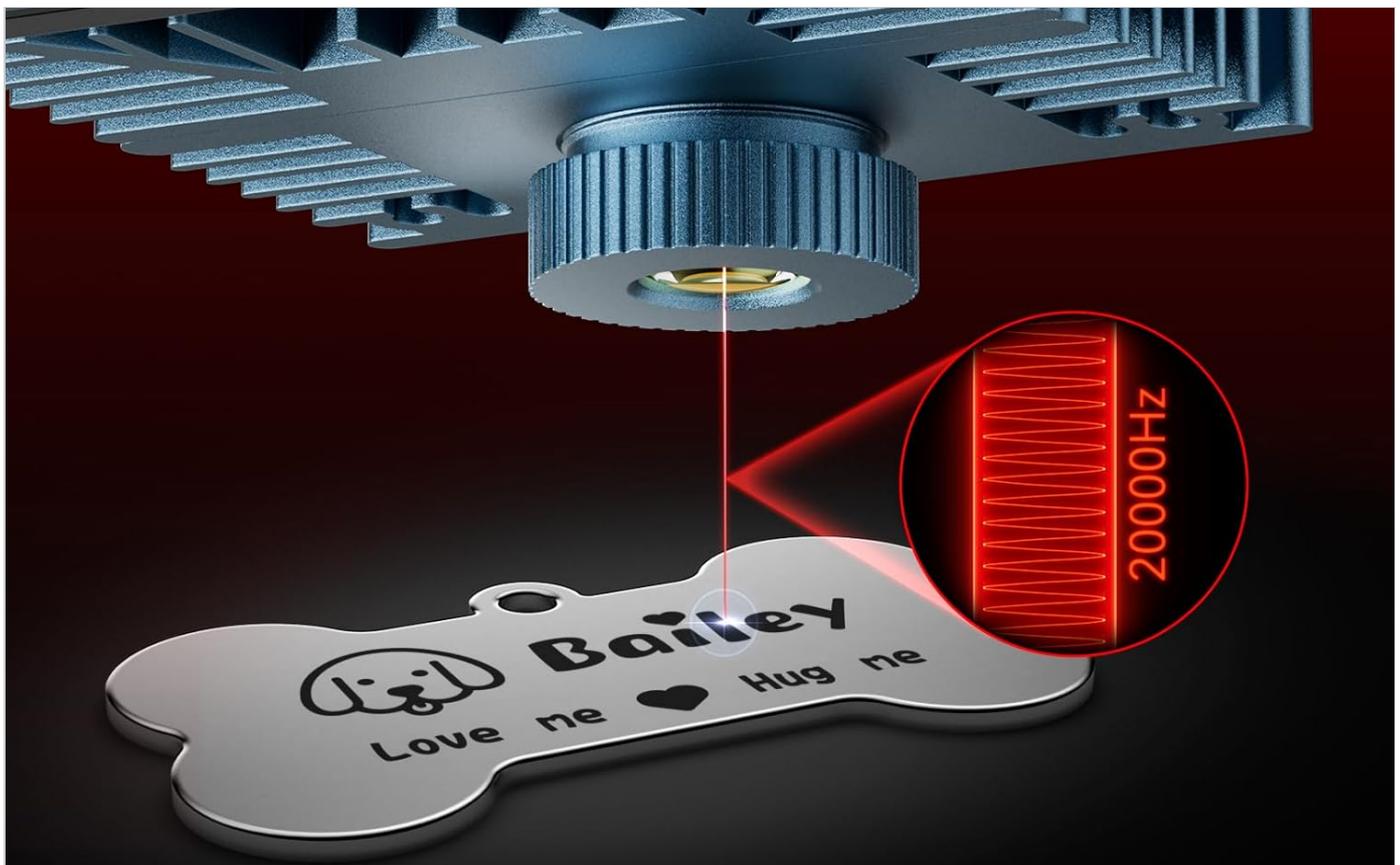


Image: Various materials successfully engraved using the IR-2 module, demonstrating its versatility.



Ultra High Pulse Energy

The IR-2 infrared laser emits a pulse energy of up to 20000Hz, making it easier to carve clear marks on metal compared to 450nm blue laser heads.



Gold



Silver



Steel



Aluminium



Brass

Image: The IR-2 module engraving a metal dog tag, highlighting its ultra-high pulse energy for clear and precise results.

7. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your laser module.

- **Lens Cleaning:** Periodically clean the laser lens with a soft, lint-free cloth and appropriate lens cleaning solution to maintain beam quality.
- **Fan Cleaning:** Ensure the cooling fan on the module is free from dust and debris to prevent overheating.
- **Cable Inspection:** Regularly check all cables for any signs of wear or damage. Replace damaged cables immediately.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Laser not firing or weak output	Incorrect power adapter, loose connections, dirty lens, incorrect software settings.	Verify 24V adapter is used. Check all cable connections. Clean the laser lens. Review software power and speed settings.
Poor engraving quality	Incorrect focus, wrong speed/power settings, material not suitable.	Adjust laser focus using the focusing post. Experiment with different speed and power settings for the specific material. Ensure material is compatible with infrared laser engraving.
Module overheating	Blocked cooling fan, prolonged high-power operation in poor ventilation.	Clean the cooling fan. Ensure adequate ventilation in the work area. Allow the module to cool down between long engraving sessions.

9. SPECIFICATIONS

Parameter	Value
Model	IR-2
Laser Output Power	2000mW (2W)
Laser Class	IV
Product Material	Aluminium Alloy
Laser Wavelength	1064nm
Working Mode	Pulse Operation
Spot Size	X:0.03mm Y:0.003mm
Power Supply	DC24V (80W)
Storage Temperature	-10°C to 50°C
Product Size	144*50*58mm
Product Weight	0.45KG

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official SCULPFUN website or contact your retailer. Keep your purchase receipt for warranty claims.

